

Three of the Belgian hare young unfortunately died during the months of September and October, from some undetermined cause (alimentary ?); one of the Belgian hare young—a doe—and the two Angoras—both bucks—survive, and appear fairly strong and hearty.

At the date on which I am writing, 7th November, 1890, the surviving young ones are twenty-three weeks old, having been born on the 29th May, 1890.

All the young at the time of their birth suffered more or less from some skin disease, which, however, disappeared under treatment, and one of the Angora young, who suffered the most from the skin disease, has been remarkably scantily supplied with hair, but this defect is becoming less and less obvious.

Both the Angora young when born were bigger and stronger than any of the other young, and they have all along retained their supremacy in this direction.

I can see no sign in the Angora young of any Belgian hare strain, and the Belgian hare young have not shown any likeness to their foster-brothers. The surviving Belgian hare inherits a white left fore-foot from her father, and one of those which died was similarly marked.

The peculiarities of the Angora young have been already noted.

The experiment described above was undertaken to determine in the first place what effect, if any, a uterine foster-mother would have upon her foster-children, and whether or not the presence and development of foreign ova in the uterus of a mother would affect the offspring of that mother born at the same time.

So far as this single case goes, the evidence is negative.

Before long, I propose to continue my experiments and to extend them.

In concluding this note, I would record my great indebtedness to Mr. Samuel Buckley, M.D. (Lond.), F.R.C.S. (Eng.), of Manchester, who has most kindly given me his valuable assistance in the necessary operative portion of the experiment.

#### IV. "The Conditions of Chemical Change between Nitric Acid and certain Metals." By V. H. VELEY, M.A., the University Museum, Oxford. Communicated by Professor ODING, F.R.S. Received October 23, 1890.

##### (Abstract.)

This paper is in continuation of a preliminary communication on the same subject; the main points contained in it are as follows:—

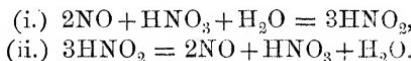
I. The metals copper, mercury, and bismuth do not dissolve in

nitric acid of about 30 per cent. concentration (the acid commonly employed for the preparation of nitric oxide gas) and heated to a temperature of 30° C., provided that nitrous acid is neither present initially nor formed subsequently. To prevent this, it is necessary in the cases of copper and bismuth to add a small quantity of some oxidising substance, such as hydrogen peroxide or potassium chlorate, or, as less efficacious, potassium permanganate, or to pass a current of air or, lastly, such a substance as urea, which destroys the nitrous acid by its interaction.

II. If the conditions are such that these metals dissolve, then the amount of metal dissolved and the amount of nitrous acid present are concomitant variables, provided that the nitric acid is in considerable excess. Change of conditions, such as concentration of acid and variation of temperature, which increase the former increase also the latter.

III. If the conditions are such that these metals dissolve, it would appear that the metallic nitrite is at first formed, together with nitric oxide; the former is decomposed by the excess of nitric acid to liberate nitrous acid, while the latter reduces the nitric acid to form a further quantity of nitrous acid.

Eventually the net result is the product of two reverse chemical changes represented by the equations—



The nitrous acid is thus destroyed as fast as it is generated.

IV. If the conditions are such that metals dissolve in nitric acid, then nitrous acid is invariably the initial product of reduction.

V. The metals copper, mercury, and bismuth dissolve very readily in a 1 per cent. solution of nitrous acid; under these conditions nitric acid present in slight excess interferes with, rather than promotes, the chemical change. This result is probably due to the greater stability of nitrous acid in the presence of nitric acid.

VI. Hydrogen gas reduces nitric to nitrous acid in presence of cupric or lead nitrate; it also converts mercuric into mercurous nitrate, but does not produce any change in solutions of bismuth and zinc nitrates dissolved in nitric acid.